

that fashion of revival. No, their manner was rational and congruous, and ours can only be so by imitating the principle which guided them, and which is eternal, rather than the manner, which is varying, and perpetually under the influence of accident or newly developing circumstance.

To iron, then, we look as the determining circumstance in our career as an original architectural people, and are only amused at the simplicity of the objections that are continually being raised by those who are destined to follow in the crowd and not to lead in the movement. At present a dozen little knots of adventurers under their respective leaders create a stir, and compel attention by the vehemence, and we will add the sincerity and the talent, with which they pursue their respective fancies. But there is a quiet progression of a less obtrusive party, whose way is being heralded by the note of successive discoveries, and whose purpose is being moulded in the deep matrix of a calm philosophy. It is not for us to say more for the present, by way of anticipation, but we will just take leave to liken the case to an analogous one within recent experience; we descend from what may be thought high, to humble ground, from architecture to road-making.

A few years back we were being amused, interested, and profited by experiments and plans for improvements in road-making, and McAdam gave his name along with his ingenuity to a system, which, if fairly examined, was little more than a revival of a very old method, or a close imitation of it; instantly a tide of improvement set in, and new lines of road were devised and carried out in every direction; old materials and old methods were adopted, and we congratulated ourselves on a perfect system. No roads like the English roads, nothing so perfect!—but what was going on quietly in and for the service of our mining districts?—An iron way, the new material and a new mode, with Iron and Coal at the bottom of it. The railroad from Stockton to Darlington was one of the quiet and comparatively unobtrusive first steps of the movement; the vehement advocates of the old style, and the learned and experienced authorities in road economy, marvelled at the ignorance of the new-light men; and even the grave authority of the ages in science was opposed to the admission of the very moderate first results predicated of the new system. What was the case? Why, on the Manchester and Liverpool Railway, the world was startled by more than the verification of all the terms of the problem; and—but we need not dwell upon it—the results are all familiar to our readers. Railways cover, or promise to cover, the face of the country. Iron has thus been at the bottom of a revolution in road-making; it is, in our firm opinion, destined to be at the bottom of a revolution in architecture. Would that we could persuade our class to think so; that, opening their eyes to the consequences, they may be prepared to avert all disturbing and mischievous effects. But we fear it—we fear that, like the road proprietors, coach proprietors, inn-keepers, road-trustees, and others having a vested interest in the old roads and modes of conveyance, that they will be lulled into a false security, and consoled by the assurances of false prophets, and thus suffer a ruinous amount of damage; while the country itself has experienced a disruption which threatens to counterbalance all the benefits that the new system promised, or really had in store for us.

Returning, however, to the question, which will serve us for many turns of disquisition and future illustration, we will content ourselves by saying, that we see, and have long seen, all the objections on the score of detail as to mouldings and members of a structure, vanish into thin air, as we also saw the other objection a frivolity, which grounded itself on the impracticability of preserving iron from oxidation. We always answered, "Wait awhile; chemical science will in time produce the remedy, and that remedy we have now detailed before us, in a prospectus, from which we extract the following report of an opinion of Professor Graham.

"The effect of zinc in protecting iron from oxidation has been known to chemists for some time. When these two metals are in contact, an electrical or galvanic relation is established between them, by which the iron ceases to be susceptible of corrosion

by dilute acids, saline solutions, or atmospheric humidity. It was found in experiments lately conducted at Dublin and Liverpool, that small pieces of zinc attached to each link of a chain-cable were adequate to defend it from corrosion in sea-water. The protection was observed to be complete even in the upper portion of the iron chains by which buoys are moored (and which, from being alternately exposed to sea-water and air, is particularly liable to oxidation), so long as the zinc remained in contact with the iron links. The protecting influence of the zinc could not be more certainly secured than in the articles prepared by the patent process, the iron surface being uniformly coated over by that metal. In trials to which I have had an opportunity of subjecting them, the iron escaped untouched in acid liquids, so long as a particle of the zinc covering remained undissolved. The same protection is afforded to iron in the open atmosphere by zinc, with a loss of its own substance, which is inappreciable minute. The zinc covering has the advantage over tinning, that, although it may be worn off, and the iron below it partially exposed, the iron is still secured from oxidation by the galvanic action, while the smallest quantity of zinc remains upon it; whereas tin, in common tin plate, affords no protection of this kind, and not being absolutely impermeable to air and moisture, the iron under it soon begins to rust in a damp atmosphere. The simplicity and perfect efficiency of the means employed to defend iron from the wasting influence of air and humidity in this process of zinc tinning certainly entitle it to be ranked as one of the most valuable economical discoveries of the present age.

"THOMAS GRAHAM, Professor of Chemistry."  
University College, London,  
April 17th, 1838.

#### GEOMETRICAL EXERCISES.

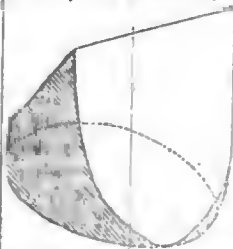
TO THE EDITOR OF THE BUILDER.

SIR,—In answer to the problem of Sam Twab, I beg to hand you the following solution.—

Take a round bit of wood, like a cork (or a cork will do as well), let it fit the round hole, and be made equal in height to its diameter, it will fit the square hole; then cut off from two opposite sides, so as to form a triangle, and it will complete the figure, a perspective of which is given below.

Yours faithfully, X.

We have received solutions also from James Pearson, Northampton; W. Muskery, &c.



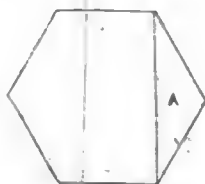
TO THE EDITOR OF THE BUILDER.

SIR.—It has afforded me much pleasure, from the commencement of your excellent periodical, to mark its progress in society, and likewise increase of numbers printed (more especially as a young beginner), feeling convinced that it will greatly assist and forward me and my fellow-students in the fine art of architecture, of which I am an admirer and student. The following problem I beg to transmit to your notice, for the solution of your readers, and by the insertion of which you will greatly oblige your well-wisher, and

A YOUNG STUDENT.

March 20, 1843.

A gentleman possessing an estate in the country, in the form of a perfect hexagon, bequeaths it in the following manner:—The triangle marked A to his wife, the rest among his nine children, viz. six of them to have the whole of their portion now, and to be all of an equal size and form; the remaining three to have the rest; theirs to be also equal in size and form, but of such dimension that at the death of the mother, her triangle divided amongst these three shall make each of theirs equal in contents to each of the other six.



[All propositions should have the solution accompanying them.—Ed.]

TO THE EDITOR OF THE BUILDER.

SIR,—May I beg of your intelligent readers to be favoured with a solution of the following proposition:—

Required, to cut a circular piece of wood or card so that the parts into which it is cut may form two ovals.

Yours obediently,

E. M.

#### ARCHITECTURAL COMPETITIONS.

So much has been said and written on this subject, and so much ill blood engendered by the faulty system of adjudication, that we feel called upon at this early opportunity to endeavour to throw over the troubled waters the oil of peace. We have always contended that there was a way to conduct these matters equitably and satisfactorily. We had in our private circle propounded our plans, and we longed for the time when we could more effectually urge them upon the attention of our brother professionals; we think the time is come, and we congratulate ourselves on its having fallen in our way to dwell upon the following—a short memoir of Lorenzo Ghiberti, which we extract from the last number of the *Illustrated Polytechnic Review*.

#### LORENZO GHIHERTI.

"It was in the year 1401 that the priors of the confraternity of merchants at Florence invited the artists of Italy to assemble in that city and vie with one another in the production of plans for one of the gates to the baptistery of St. John. Many obeyed the invitation, and seven were chosen, to each of whom the priors gave a sum that should cover his annual expenses and indemnify him for the loss of a year's labour, on condition that at the expiration of that time he should produce a panel in gilt bronze, on which should be sculptured, in bas-relief, the sacrifice of Isaac. When the year had expired, thirty-four persons, sculptors, painters, partly from Florence, and partly from other places in Italy, assembled to adjudicate the prize. It was determined that the adjudication should take place in public, and be supported by the reasons orally delivered, of each judge. Jacobo della Quercia, of Siena; Niccolò d'Arezzo, his pupil; Simon da Colle, surnamed de' Bronzi; and Francesco di Voldubrina, produced works that were inferior to those of the other three; while Brunelleschi and Donatello, the latter but eighteen years of age, contended at once the superiority of the seventh, a young man of three and twenty, Lorenzo Ghiberti, the son of Uguccio, a citizen of Florence, the member of a family illustrious by the offices which its members had filled, and their success in the arts, more especially that of carving in gold and silver. Lorenzo had all the tastes proper to its family, and more power than was ordinarily allotted to it. As an architect he was associated with no less a person than Brunelleschi. As a painter he made himself a name by a figure of St. John the Baptist on the window of the church of Or-San-Michele, and the painting on glass of Santa Maria de' Fiori; as a writer he distinguished himself by a treatise on sculpture, a copy of which is to be found in the Magliabecchian library.

His fellow citizens did not raise him to the supreme dignity of gonfaloniere of justice; but he died in the rank next to it, as major of the council degli Signori, about the year 1455, and in his 78th year.

We have here two themes suggested to us, both matters near to our heart, both placed in the most favourable light we could wish for—we have the origin of confraternity, and the competitive trial and tribunal; but it is with the latter only that we propose to deal on the present occasion.

How true it is that "there is nothing new under the sun," and if we would condescend to look into the records of past time, we should find a working precedent, applicable with but slight modifications to almost every case of difficulty in modern experience. Here we have a competition carried on in a spirit that engenders no bitterness, excites to no unworthy tactics, degrades no one, and, if possible, elevates the art. How different to the plan pursued now-a-days in this country! We have known many competitions wherein from sixty to one hundred architects have been engaged, many of them for a month, six weeks, and two months, in the formation and production of their designs—bringing to bear upon them all the requirements and talent of which they were masters, and if we sum up the aggregate value of these plans measured by the time and labour and outlay absorbed, we might venture to place them at from £3,000 to £5,000; well, these plans, the anxious care of so many pro-